IN THE CLAIMS

Please add new claims 67- as follows:

67. A supramolecular structure comprising:

a multi-generation dendrimer comprising a core, a plurality of interior generations spherically disposed around the core and an outermost generation comprising a plurality of dendritic branches having terminal groups sufficiently reactive to undergo addition or substitution reactions; and

at least one cross-linkable moiety bonded to the terminal groups of each dendritic branch via a labile bond; wherein the cross-linkable moieties of adjacent dendritic branches are intramolecularly cross-linked to form a dendrimer having an intramolecularly cross-linked peripheral surface.

68. The supramolecular structure of claim 67, wherein the dendrimer is selected from the group consisting of poly(propylenimine) (DAB) and polyamidoamine (PAMAM) dendrimers.

69. The supramolecular structure of claim 67, wherein the labile bond is selected from the group consisting of silicon-oxygen, silicon-oxygen-carbon, oxygen-nitrogen, nitrogen-silicon, nitrogen-carbonyl-nitrogen, silicon-acetylene, amide, blocked isocyanates and ureas.

70. The supramolecular structure of claim 69, wherein the labile bond is a nitrogen-silicon bond.

71. The supramolecular structure of claim 67, wherein the dendritic branches are intramolecularly crosslinked by one method selected from group consisting of hydrosilation, olefin metathesis, radical polymerization, polycondensation, anionic polymerization, cationic polymerization and coordination polymerization.

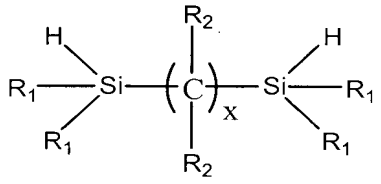
61
72. The supramolecular structure of claim 71, wherein the crosslinking method is hydrosilation.

62
73. The supramolecular structure of claim 71, wherein the dendritic branches are crosslinked with a crosslinking agent.

63
74. The supramolecular structure of claim 73, wherein crosslinking agent is selected from double and multiple crosslinking agents.

2

64
75. The supramolecular structure of claim 74, wherein the double crosslinking agent is of the general formula (I):



(I)

wherein where R_1 is selected from the group consisting of hydrogen or organic groups having from about 1 to about 30 carbon atoms, R_2 is selected from the group consisting of hydrogen and organic groups having from about 1 to about 30 carbon atoms, and x is an integer from about 1 to about 4.

65
76. The supramolecular structure of claim 74, wherein the multiple crosslinking agent is selected from the group consisting of $CH_3Si(CH_2CH_2Si(CH_3)_2H)_3$; $CH_3(CH_2SiH_2)_2CH_3$; $HC(Si(R^1)_2H)_3$; $Si(R^1)_2H_2$; $(SiR^1HO)_4$; linear polymers selected from the group consisting of $(CH_3)_3Si\text{-}O\text{-}(SiR^2H\text{-}O)_n\text{-}Si(CH_3)_3$, $H(CH_3)_2Si\text{-}O\text{-}(SiPH(\text{-}OSi(CH_3)_2H)\text{-}O)_n\text{-}Si(CH_3)_2H$, $(CH_3)_3Si\text{-}O\text{-}(Si(CH_3)(H)\text{-}O)_m\text{-}(Si(CH_3)(C_8H_{17})\text{-}O)_n\text{-}Si(CH_3)_3$, and $H_2R^3Si(SiR^3H)_n\text{-}SiR^3H_2$; cyclic compounds; a dendrimer; and mixtures thereof; wherein

R^1 is selected from hydrogen and organic groups having from about 1 to about 15 carbon atoms;

R^2 is selected from methyl and ethyl groups;

R^3 is selected from aryl and alkyl groups having from about 1 to about 15 carbon atoms;

n is a positive integer from about 10 to about 100; and

m is a positive integer from about 10 to about 100.

66
~~77~~. The supramolecular structure of claim 71, wherein olefin metathesis includes the use of a ring opening metathesis polymerization (ROMP) catalyst.

67
~~78~~. The supramolecular structure of claim 71, wherein olefin metathesis includes the use of a acyclic diene metathesis (ADMET) catalyst.

68
~~79~~. The supramolecular structure of claim 71, wherein the coordination polymerization is Ziegler Natta polymerization.

69
~~80~~. The supramolecular structure produced by claim 67, wherein the core dendrimer contains catalytic centers.

70
EWP A_2 ~~81~~. The supramolecular structure produced by claim 67, wherein the core dendrimer contains metallocores.

?

Please cancel claims 1-66 without prejudice or disclaimer, and before the calculation of the filing fee for the present application.